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EVALUATING COMMUNICABILITY IN VILLAGE SETTINGS

R N SRIVASTVA

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EVALUATION REPORT

COMMUNICABILITY & COMPREHENSIBILITY of the MANUAL for CHWs

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This report is based on research carried out at the Department of Linguistics, University of Delhi, Delhi, and the field work was conducted at the two Primary Health Centres of Uttar Pradesh, between May and August, 1978. The work is supported by a grant from the UNICEF for which I am grateful to its officials. I would particularly like to express my gratitude to Prof. R.C. Mehrotra, Vice-Chanceller, University of Delhi who has all along been very encouraging in enabling the Department to extend its expertise to the problems facing our country. My major debts are to associates of my research team who carried out the field work in the gruelling heat of the summer with devotion and enthusiasm. They were helpful in preparing substantial parts of the report. I would like to acknowledge also the help of the following groups of people without whom the work would have been impossible—village informants, Community Health Workers, medical and para-medical professionals of the two Primary Health Centres of Mauranipur (Jhansi) and Daurala (Meerut) and the Central and State Government officials in the Ministry of Health and Family Welfare. I am also grateful to our expert members for actively participating in a one-day workshop held at Delhi for giving their critical and constructive suggestions. I am appreciative of Mr. Peter Godwin's participation in our group discussions. Finally, I express my appreciation of the hard work put in by our technical assistants and typists.

R.N. Srivastava,
Project Director

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Excerpt from the letter No. 1439/VC dated June 26, 1978 of Prof. R.C. Mehrotra, Vice-Chancellor, University of Delhi, addressed to Prof. R.N. Srivastava:

'I would like to take this opportunity to express my deep appreciation for the challenging work that you and your associates have undertaken. It is only appropriate that a University Department should extend its professional expertise and experience to problems facing our large community in the rural areas. I hope that your work on the *Communicability and Comprehensibility of the Manual of Community Health Workers* (*Hindi Version*) shall prove immensely beneficial in creating a consciousness in the field of Health education in our rural areas. I am greatly impressed by your concern that the medium of such education should be closer to the language of our rural population. I hope your work will have some useful bearing on language used in programmes in adult literacy/ education.'

The project was written and complied by:

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PART I

OVER-VIEW

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INTRODUCTION

A. The New Rural Health Scheme

Despite the impressive spread in health education and health services generated during the last thirty years, medical technology continues to perpetuate and promote 'the colonial tradition of urban, curative and privileged-class character of the health services system of the country.' (Banerjee, 1976). Prof. Ramalingaswamy (1976) has categorically stated that it continues to be 'over-centralized, over-expensive, over-professionalized, over urbanized, and over-mystified.'

Is it not the bitter irony of our society that in a country where 70 %of our population live in rural areas or in the urban slums, health has been made a commodity by health-planners and medical professionals for those who can pay for it? It is now an open secret that our health care is designed to cater to the health needs of well-to-do urban people. Like other modes of production, it is meant to benefit the upper and the middle classes and not the masses or the people. Consequently, preconditions for being healthy for village toilers and the urban poor remain a dream. One finds no sense of social responsibility for ensuring good health for the 70% of our population which virtually lives in poverty and disease. This lop-sided evolution of health services continues to deprive the vast majority of our population of many other good things in life. Even after thirty years of independence, our medical system perpetuates the over-professionalised and highly sophisticated curative type of medicare suited to the conditions of industrialised societies.

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The policy of Health Care Services in the Rural Areas was included in the Election Manifesto of the Janata Party; it envisaged an attempt 'to bring simple medical aid within the reach of every citizen by organising a cadre of medical and para-medical community health workers among whom the trained practioners of indigenous systems of medicine will be a part.'

The Union Minister for Health and Family Welfare announced on April 20, 1977, the Janata Government's policy of Health Care Services. It was pointed out by him that, inspite of thirty years of work in the area since independence, we have neither utilized the wisdom and the capacity of the simple but extremely intelligent people of the villages for their own welfare nor made a significant impact on the health status of the rural population. His opinion was that the steps which were taken for the development of the villages had not been adequate. According to him, 'people's co-operation was not sought to make rural development a success,' and, 'all developmental activities were run by those who did not have their roots in the villages and who did not have direct knowledge of the needs of the villages.'

In pursuance of the objectives, the Ministry of Health and Family Welfare, Government of India, launched a massive training programme in October, 1977, with a view to creating a trained cadre of Community Health Workers (CHW) for an on-going work in the villages. Under the scheme, preventive and promotive measures of health science assumed greater significance. It was emphasized that any amount of curative medicine is not going to be of any use unless the common people of the villages are educated in how to prevent disease and maintain good health. In the Foreword of the Manual for CHWs Mr. Raj Narain explicitly made this point in the following words:

'All these years the curative aspect has been dominant in Health Services. I would like the Community Health

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Workers to educate the people in the villages on how to prevent diseases and keep good health. The Community Health Workers should know how to maintain good health and should teach people how to be healthy. It should be their sincere effort that each individual in the village knows everything about health which the Community Health Workers themselves know. In fact, every individual should, in due course, become a health worker for himself. Every citizen of our nation will be an epitome of good health and the life of the nation will be healthy and happy when the Community Health Workers succeed in their effort.'

While examining the health needs of the nation at the level of 'rural population and the urban poor' it was realized that the indigenous medical practices had been of great help to the people because, firstly, many of the traditional systems and treatments did effectively work; secondly, the indigenous methods in health science could be universalized as it is far less costly then the Western medicinal system which requires elaborate machinery and expensive drugs; and thirdly, these indigenous methods have some psychological, emotional and social advantages which the modern system under the rural conditions lacks. It was thus decided to combine the good features of both the systems and train a cadre of dedicated part-time health workers.

Under the new scheme, CHWs are selected by the villagers themselves and are members of those communities. One CHW is selected from each one thousand of the populace and he is expected to be sincere in wishing to serve in the area of health. These CHWs are expected to have the educational qualifications of 8th to 10th standard. However, in an extract of para. III (d) of the Guidelines for the Selection of CHWs in Utter Pradesh it is pointed out that the trainee 'should be able to read and write. However, since with higher level of education,better quality of service would be available it is recommended

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that the person to be selected should have had formal education upto the 6th standard.'

There are 741 Primary Health Centres (PHCs) where the scheme is currently in operation. The scheme covers about 74,000 villages. It is expected that there would be about 44,000 trained CHWs working in the field by the end of June, 1978.

An evaluation of this scheme has been made by the Institute of Health and Family Welfare, All India Institute of Hygiene and Public Health, Calcutta, Indian Council of Medical Research, Indian Institute of Management, Ahmedabad, Indian Institute of Population Studies and the Gandhian Institute of Rural Health. The evaluation by the Institute of Economic Growth shows that 'the new Rural Health Scheme has been generally welcomed by the rural masses.' The findings of the Gandhian Rural Institute reveal that the scheme has penetrated deep in the minds of the CHWs and that there are cases where CHWs have shown willingness to carry on the work even if no honorarium is paid to them. The interim report of the National Institute of Health and Family Welfare indicates that in general the scheme is acceptable to a large section of villagers.

Inspite of the fact that the new scheme has evoked international interest and has been assessed by certain agencies as 'revolutionary' in nature, we find not only voices of dissent from different sections of the society but also widespread opposition from the medical profession. The Indian Medical Association has been a bitter critic of the scheme. The government and private doctors are critical of its effectiveness. Journalists are generally sceptical of this scheme which aims at taking simple medical aid to the doorstep of every villager. Under these divisive opinions and conflicting expectations, the fact remains, as pointed out by one of the evaluation agencies, that 'by and large, the new rural Health Scheme is benefitting the scheduled castes and low income group.' Moreover, as it

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takes time and money to produce fully trained professionals in medical science to serve a nation of massive population, it is the only supplementary measure required to bring basic health care to such a large population.

Background of the Scheme

The concept of the new Rural Health Scheme, being promoted by the Union Ministry of Health and Family Welfare, Government of India, has got its own history. The report of the Sub-Committee on National Health appointed by the National Planning Committee in the year 1938 envisaged the training of intelligent young men and women 'imbued with a missionary spirit' with the sole objective of conveying to the men under training 'the social implications of medicine as a science.' The sub-committee stated:

'. . . We feel that the most urgent and important task which faces us is to educate our rural population in healthy living and make it possible for them to do so. The health worker will be from among the villagers only somewhat better trained than them. He will not appear to the villagers as a strange imposition of a strange system, but as their kith and kin who desires to help them.' The Bhore Committee on Heath Survey and Development (Government of India, 1946), set up by the Colonial Government in India in 1943 (report submitted in 1946) also emphasized the need for social and preventive orientation in the rural health services. The Committee accepted the following four guiding principles for its recommendations:

(*i*) No individual should fail to secure adequate medical care because of inability to pay for it;

(*ii*) Health programmes must, from the beginning, lay special emphasis on preventive work;

(*iii*) The need is urgent for providing as much medical and preventive care as possible to the vast rural

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population of the the country because they receive medical attention of the most meagre description although they pay the heaviest toll when famine and pestilence sweep through the land; and

(*iv*) The doctor of the future should be a social physician attracting the people and guiding them to a healthier and happier life.

Though the Government of India accepted the recommendations of the Bhore Committee, it obviously could not implement them in their true spirit.

The full implementation of the Bhore Committee Report was hindered by the urban biased vested interests. While urban areas continued to receive specialized medical services, rural areas remained neglected in terms of essential and basic health services. It took four other Committees to emphasize the needs for providing health services in rural areas through appropriate agents of health care. The Committee on Integration of Health Services (1963) suggested the institution of multipurpose workers as agents of an alternative health care system for the rural population. This institution of multipurpose workers could not be fully realized in the context of a conflict with the unipurpose workers, (e.g. malaria compaign, family planning compaign). In the outline of the Master Plan for the Provision of Health, Medical and Family Planning Services in Rural Areas (1970), the concept of mobile dispensaries was envisaged for inaccessible rural areas. This Master Plan provided certain incentives to physicians opting to work in rural areas. The concept of a "peasant physician" inspired by the Chinese "Barefoot Doctor" was introduced in the National Health Scheme for Rural Areas (1972).

Most of the above stated attempts failed to materialize but did represent a reaffirmation of the Government's commitment to provide health services in rural areas. This

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commitment was manifested in a composite form in the recommendations of the Srivastava Committee.

The Report of the Srivastava Committee (A Programme for Immediate Action, 1975) on Medical Education and Support Manpower re-emphasized the involvement of health workers from rural areas with a view to gaining the confidence of the people. The committee highlighted the need for local participation, social advantages of the indigenous systems of medicine, the creation of a large band of semi-professional and part-time health workers as second-level supplementary personnel to fully trained professionals and the different roles assigned to these para-professional functionaries in the fields of promotive or preventive aspects of health and family planning.

The Srivastava Committee laid down the following five basic criteria for the evalution of a strategy to provide health services to all:

(1) The development of an integrated service covering promotive, preventive and curative aspects of health service and family planning;

(2) universal coverage and equal accessibility to all citizens;

(3) the full utilization of all para-professional resources available in the community, and their supplementation by a well structured system of referral services;

(4) the promotion of indigenous research as well as full use of the latest scientific developments made elsewhere in the field, and

(5) the possibility of practical implementation within the financial resources likely to be available.

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A developmental perspective on the spread of health services in India can be had by looking at the following presentation of relevant information extracted from Naik (1977):

		1947	*1977*
(1)	Life expectancy	32 years	52 years
(2)	Death rate per thousand	27.4	11.3
(3)	Infant mortality per thousand live births	183	113
(4)	Medical colleges	15	106
(5)	Admission capacity per year in medical colleges	1200	12,500
(6)	Output of life-saving drugs per year	Rs. 10 crores	Rs. 450 crores

B. The Manual

It is true that the pre-conditions for the success of the new Rural Health Scheme involve and entail many variables, like greater involvement of the community, imbued missionary spirit of CHWs and their working conditions, strengthening of the administrative and health infrastructure etc. However the success depends much upon building up a strong health cadre with a hard core of qualified CHWs. Unless the perspective and the objectives of the new scheme and due roles assigned to them are made explicit, and unless a rigorous training programme to equip them with the knowledge, competence and skill needed for preventive and promotive health services is taken up seriously at PHCs, there is every danger that the scheme will lead to quackery and malpractices.

Remembering that the CHWs are not 'Bare-foot doctors' but 'Health Workers' and, hence, need an entirely new type of orientation and also that they have to organize their work primarily on 'indigenous systems' of medicine which are varied and diffused in nature (not merely

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on a crystallized and well established allopathic system), the training programme envisaged PHCs with doctors and specialists well qualified in ayurveda, yoga, unani, siddha and homeopathy to deliver effective lectures in a well thought-out format. This of course is an administrative problem which each PHC has to face and resolve. In addition to this there was a need for giving meaning to the lectures which was rather impossible without a prescribed syllabus covering different aspects of Western and indigenous treatments under actual rural conditions and the educational level of the trainees. Over and above, a three months' training programme can pass on information on health science through Short Term Memory but which unless reinforced, is bound to disappear fast from the memory of CHWs. All these requirements necessitated bringing out a manual.

The Manual has been the joint endeavour of several institutions and individuals especially the General Training Institutes and the various departments of the Ministry of Health and Family Welfare. The UNICEF has provided the financial assistance for its printing and publication. Though the Manual was written as a reference book for use after training, in fact in many places it is also being used as instructional material. The Manual is used both in training (by doctors and specialists) and as a reference book after training (by CHWs).

Looking at the different roles the Manual has to discharge, the educationally functional measures inherent in it should have the following three dimensions:

(*a*) as a *supplementary book* to the teaching/training programme,

(*b*) as a *reference book* for the CHWs in the field, and

(*c*) as a *guide book* in preventive health hygiene and in first-aid techniques for the village lay person (comparable to those produced by the Red Cross Society).

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One would wonder how all the three functional measures could be lumped together as 'three-in-one' in the same Manual. As these three functional uses of the manual demand distinct perspective and orientation of its form and content, it is advisable that there be three variants of one and the same Manual. However, the Manual under test has been seen primarily as a reference book to be used by the CHWs in the Medical Auxiliary field (Health Education) involving three areas of activity i.e.:

(*a*) preventive measures,

(*b*) promotive measures, and

(*c*) curative (Elementary First-Aid) measures.

Despite the different functional uses to which the Manual is put, it has been prepared, as the Foreword indicates, 'with a view to enabling the Community Health Workers to discharge their responsibilities properly.' Not that it was meant to contain information on the fundamentals of health, but while preparing this Manual, 'particular care has been taken to see that the Community Health Workers get fundamental knowledge about our traditional systems of medicine—yoga and naturopathy—which they should utilize for bringing about a positive improvement in the health of the people.'

The Manual is to be seen primarily as a basic reference book for CHWs serving as a guide to :

(*a*) the education of the CHWs themselves (through the training programme),

(*b*) the education of common people in the villages (through CHWs),

(*c*) the CHWs in the field when they are unable to recollect the information imparted during the training programme, and

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(*d*) the CHWs in the field when the symptoms of an ailment are not immediately recognisable.

Needless to say, for any health scheme that proposes to take health care to the rural masses through para-medical personnel, written materials like the present Reference Manul are of fundamental importance. But for its optimal use among the rural masses, the Manual must be conceived as an operationally useful problem-solving reference book. The content and its presentation should reflect the likely needs of the CHWs on their job and the communication setting of the trainees who are going to use it. It should also provide for quick information retrieval.

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I. THE PROJECT

In view of the central importance of the Manual as a reference guide in day-to-day work of the CHWs it is imperative that the comprehensibility of content and expression be evaluated by the use of modern techniques of analysis. The objectives of the project have accordingly been visualized in both theoretical and pragmatic terms. These can be stated as below :

(*a*) to test the comprehensibility and effectiveness of the Manual both in relation to content and expression (i.e. information aspect as well as its presentation),

(*b*) to test the usefulness of the Manual primarily as a self-contained reference guide for the Community Health Worker in the field and secondarily as an aid to the teachers as a supplement to the training,

(*c*) to specify the role of communicative strategies appropriate for the instructional process during the period of training and for the Community Health Worker in his attempts to transfer knowledge/ability to the common man,

(*d*) to make suggestions for effecting improvements in the Manual, and if possible, lay down guidelines for its meaningful revision, and

(*e*) to develop a 'Manual Evaluation Design' with potentialities of wider application.

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The present project is mainly concerned with the evaluation of comprehensibility of content, adequacy of linguistic description, strategies of presentation of facts and socio-ecological factors that determine the communication setting of rural life. The Manual is primarily a reference book to be used by CHWs during the discharge of their duties. It needs to be tested to find out whether its contents are structured according to the CHWs perceived roles and activities and further whether its linguistic and presentational media are appropriate and adequate enough to convey the message through a 'down to earth' process.

Some Requirements of a Manual

It is our common day experience that the form and content of the text books or reference manuals being produced are generally not in tune with real life situations and prevailing social conditions. They, in fact, convey encyclopaedic knowledge which has nothing to do with the preoccupation, the interests, the level of educational achievements, and the language proficiency of their users. A manual can be seen as a 'unit of work'—a phrase now being used to refer to the 'method of organising learning experiences'. A 'Unit' in fact, consists of 'purposeful (to the learner), related activities so developed as to give insight into, and increased control of, some significant aspects of living,' (Lee & Lee 1950 : 222). Burton has distinguished between the 'subject matter units' of the formal type and 'experience units' of the functional type of educational learning. Some of the differences between the two types of units as conceived by Burton (1944 : 147-48) are as follows :

Formal (Traditional) Units	*Experience Units*
—begin in the intention of users to teach approved subject matter;	—begin in the intention of the user to achieve some purpose to satisfy some need;

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Formal (Traditional) Units	*Experience Units*(cont.)
—are organized logically around a core within the subject matter;	—are organized cognitively with the ultimate purpose of developing desirable understanding attitudes, skills etc., in the user;
—are organized from simple to complex and within subject fields;	—are organized functionally and in disregard of subject lines;
—Have little reference to the present and future problems;	—are usually centred in the present and future;
—are usually centred in the accumulated, not the accumulating culture;	—use accumulated materials from past freely in solving present problems;
—are closed with a backward look, the so called 'review'	—lead to new interests, problems and purposes.

It is obvious that the Mannual should be a research unit carefully prepared on the principle of Experience rather than Traditional units. It should have at least the following characteristics :

1. The Manual should be based on purposes which are real to the new Rural Health Scheme.

   The perspective and objectives of the new Rural Health Scheme have been discussed in the preceding sections. However, the following three points should be reemphasized :

   (*a*) The target group of the health services under the new scheme is not the urban rich but the rural poor.

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(*b*) The obtainable objectives are basically preventive and promotive aspects of health and family welfare (by educating the people in the villages on how to prevent disease and keep good health), and

(*c*) The agency instrumental in bringing about the change in conditions in the realm of health and life is the large band of semi-educated part-time CHWs (serving as a second-level personnel supplementary to the fully trained professionals, not a substitute for them).

2. The Manual, being a reference guide, should be simple enough for immediate and on the spot reference; its organizational potency should have a problem-solving orientation based on checklists, tables, lists of diseases, symptoms, preventive measures, etc.

3. The Manual should deal with problems of living sufficiently significant to merit careful study.

4. The Manual should be structured according to the CHWs' perceived roles and activities.

5. The Manual should deal with material within the comprehension of the CHWs.

6. The Manual should, as far as possible, be free from retroactive inhibition, i.e. interference in learning.

7. Illustrations and activities, should be as authentic and real to the rural living conditions as possible.

Communication and Comprehensibility

The Project is confined primarily to the analysis of comprehensibility of content and expression, and of the effectiveness of the Manual as a self-contained reference guide. But this goal has to be viewed in the broader

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context of a functional approach to the *communicative aspect of language and comprehension theory.*

The general theory of *comprehension* involves such factors as the mapping of stimuli into cognitive representations which enable the subject to gather information beyond that which is actually presented to him. The subject, thus, identifies and memorizes the information, transfers it to relevant areas of use, and has the ability to draw inference from it for possible use in new situations. Memory is so largely dependant on comprehension and understanding that its development can scarcely be considered apart from them, for we all remember much of what we understand well. Rote memory, except in instances of over learning, is memory of short duration. Similarly, attention and transfer cannot be demanded. They are the by-products of interest and maturity (Strang, 1947) and interest is nothing but a form of 'self-expression activity' (Dewey 1913) after the subject matter has been understood and comprehended.

The comprehension of the subject matter depends upon the reader's experience, power and needs. As an instrumental aid, the subject matter of the Manual should be carefully selected and powerfully presented. The selection of the subject matter is made with the purpose of bringing about the desired changes in the competence and performance of the CHWs. It cannot follow from the objectives alone; it must be related to the instructional factors (IF), learner factors (LF), presentational factors (PF) and socio-cultural factors (SF) (See pp. 22-23).

This can be shown diagrammatically as in Figure I.

A functional theory of communication describes the purpose or intent in terms of a communicative event, which consists essentially of three factors : *source*, *message* and *receiver*. The functional use of these factors with respect to a linguistic act can be identified with an orientation of language to each of these factors in turn. This is shown diagrammatically in Figure 2.

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Figure 1.

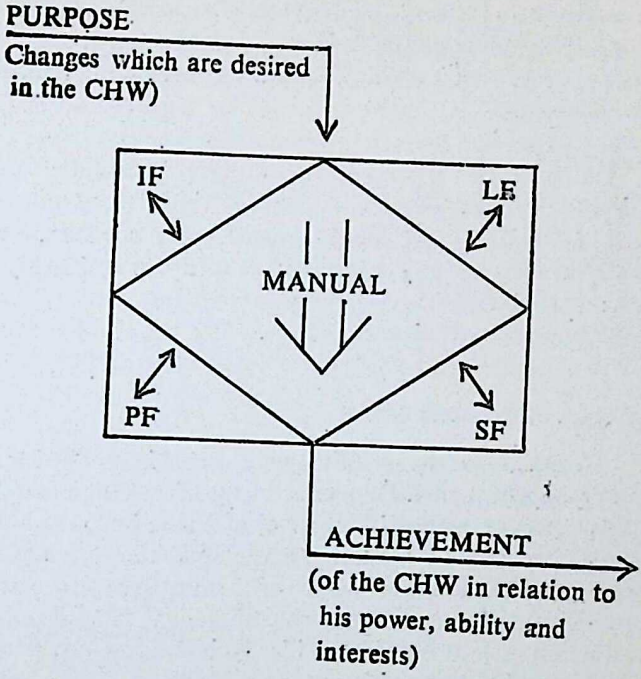
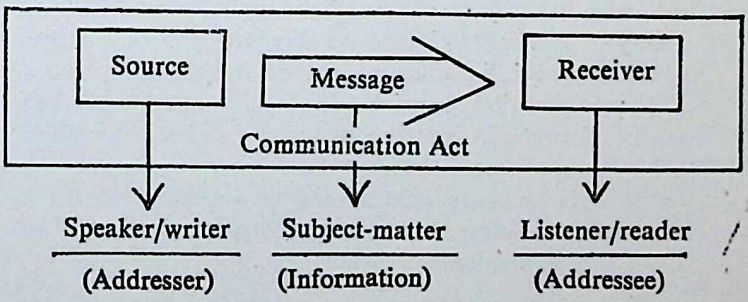


Figure 2.



However, two more factors are vital to a communication act. A communication act can not be realized unless a *code* common to the source and the receiver is established, i.e. a set of rules commonly known to an addresser and an

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addressee exists to transmit the message through a given channel of communication. An addresser verbalizes his message by an act of encoding and a receiver understands the given message by an act of decoding. It is in this respect that communication implies a sharing of elements of behaviour.

A communication act takes place in a given social setting. It is not intelligible if it is abstracted from the *social context* of which it is a part. It is, therefore, fruitfully analysable only in terms of its setting, relationship of the participants to one another and to the code, status and place of participants in the society etc.

Choice of Research Model

A functional theory of language behaviour calls for an interactional model. Each constituent of the communication act not merely interacts with others, but in the process also influences and restructures the other. For example, the tacit knowledge of the language structure of participants (of a given speech community) in an idealized situation may be considered ideally homogeneous. But we find in reality that neither a social system of a given speech community nor the verbal competence of its members is uniform and homogenous. Differential competence within a heterogeneous speech community is too hard a reality to be ignored either for a theory or for its application in the field. Both 'differential' in verbal competence and 'heterogeneity' in social structure are undoubtedly the result of the acculturation process and social mode of behavioural norms. Sub-cultural difference (e.g. upper and lower social status, educated and non-educated or urban and rural variables) do affect the competence in controlling functional varieties of a language.

Experimental evidence has shown that a participant in a communication setting may have dual competence in reception (i.e. understanding) but single competence in production (i. e. speaking/reading) (Labov : 1965). For

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example, lower class negro children in the USA are able to interpret sentences in either standard or non-standard varieties of their own speech. Srivastava in his work (1973) on the verbal behaviour of the Bhojpuri speakers of Hindi speech community, has similarly found a number of speakers in rural settings who have dual competence in reception (i.e. they can understand a message in both—Bhojpuri dialect and Hindi language) but single competence in production (i.e. they can speak only in their dialect). Within the Indian speech community which is multilingual as well as socially stratified, we find speech strata where participants have even triple competence in reception (English, Hindi and Dialect) but only dual (English and Hindi or Hindi and Dialect) or single (Hindi) competence in production.

The place of language in education or in other socially functional roles requires a theory that can deal with a heterogeneous speech community, differential competence and the constitutive role of social functions.

Micro and Macro-factors of Language

Looking at the fact that the form and content of language are dynamically different in structure and texture under different conditions and use and also that the meaning of a message as a stratum is intermediate between the grammatical system and the socio-educational system, the language of the Manual has been seen in both dimensions—(*a*) L1, linguistic dimension characterized by micro-factors i.e. the dimension which tends to be within language and (*b*) L2, linguistic dimension characterized by macro-factors, i. e. the dimension which reshapes the structure and texture of language by factors external to the language.

Thus, the language of the Manual under the present project has been seen as a linguistic act in the context of a code characterized by micro-factors (L1) and also in that of a code characterized by macro-factors (R2) including

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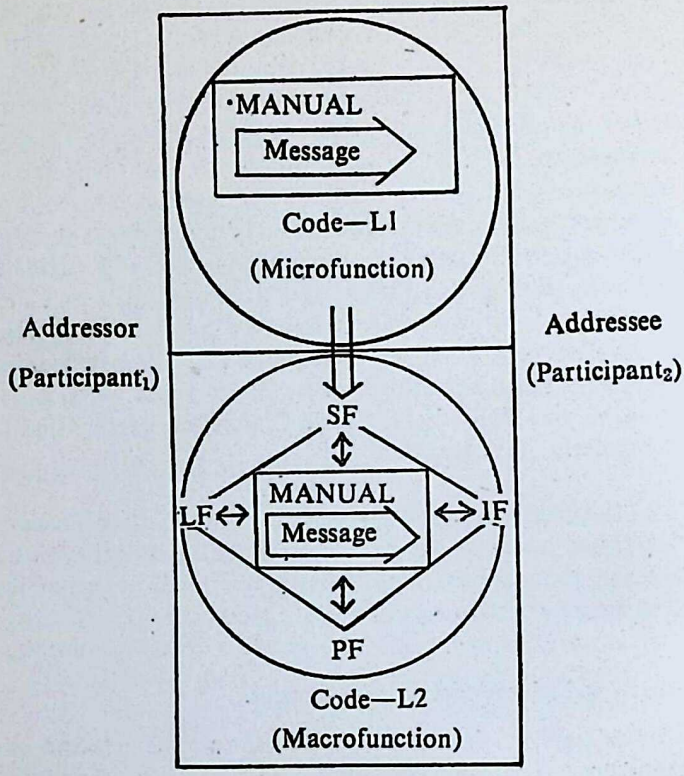

instructional (IF), socio-cultural (SF), learner (LF) and presentational (PF) factors.

In order to develop a 'Manual Evaluation Design' with potentialities of wider application, the rationale for the methodology concerning the research design have been centred around the Manual involving five distinct types of factors :

A. Micro-linguistic Factor i.e.

Linguistic Analysis (LA),

B. Macro-linguistic Factors i.e.

(*i*) Socio-cultural Factors (SF)

(*ii*) Instructional Factors (IF)

(*iii*) Presentational Factors (PF)

(*iv*) Learner Factors (LF)

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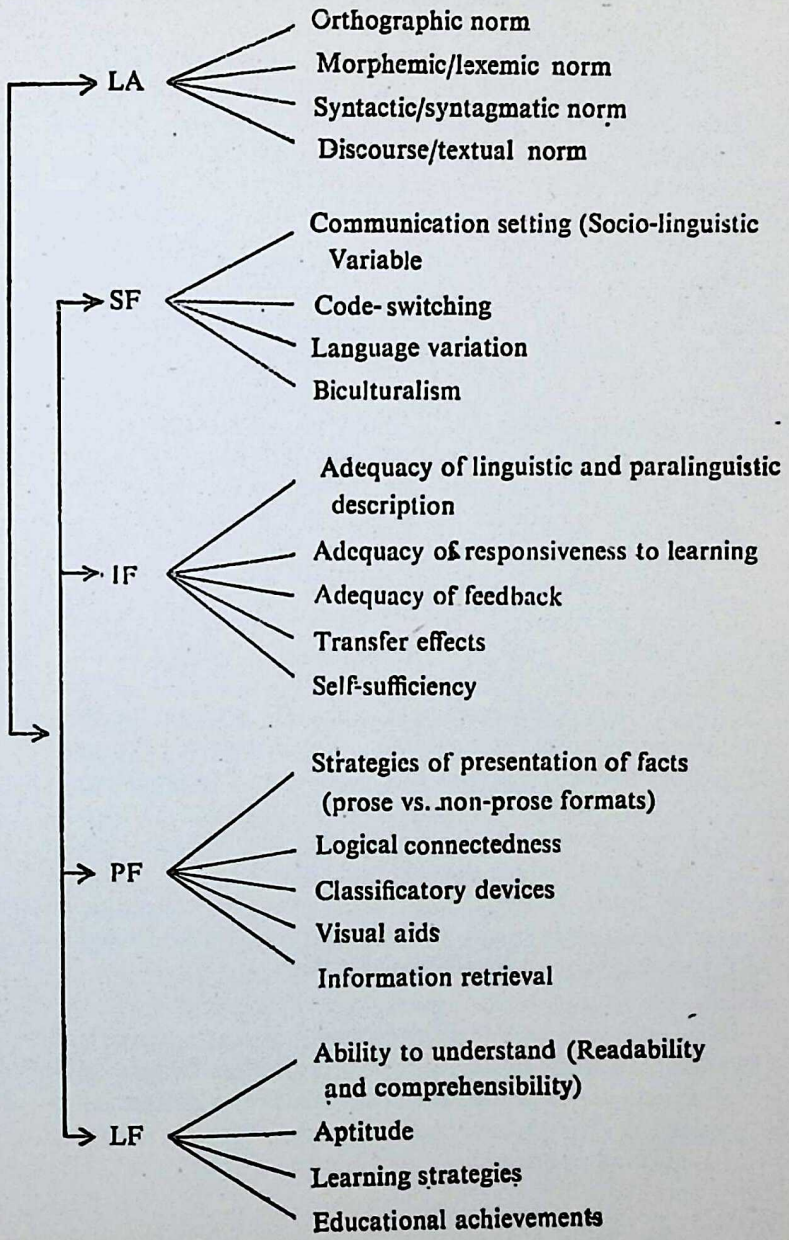
Each of the above factors is envisaged as having different components of analysis :



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Micro-linguistic factors (LA) are concerned primarily with reading as a linguistic skill. Reading as an act has been viewed as fulfilling certain types of sub-tasks related with the hierarchical organization of the form; a correct appraisal and understanding of the content of a text can beachieved only after performing subtasks associated with the processing of different units of different strata of language organization viz., orthography, grammar, lexicon, text, etc.

A study of the socio-cultural factors (SF) takes into account the nature of communication setting, degree of code switching, extent of language variation, and range of biculturalism in a speech community.

Learner factors (LF) deal with such aspects as a learner's ability to understand, his aptitude, the learning strategies adopted, and the educational achievements gained. The outcome expected in this process will include the knowledge of basic specific facts by the learner, understanding of basic principles, grasp of technical terms (register), and the employment of critical thinking in reading.

A study of instructional factors (IF) is aimed at finding out linguistic and paralinguistic adequacies in respect of the intended message, their adequacy of responsiveness to learner factors, adequacy in terms of feedback, transfer effects and self-sufficiency. The outcome expected in this process will include the study of rhetorical devices employed in the writing of the text, primes of knowledge to action in a day to day speech-format and finally its potentialities in stimulating critical thinking.

In presentation factors (PF) we propose to investigate into such areas as strategies of presentation factors, their logical connectedness, use of classificatory devices, effectiveness of prose and non-prose formats, role of visual aids and potentiality of information retrieval. The

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outcome of this investigation will be available in terms of effectiveness of the communication and the usefulness of the Manual as a reference book.

It needs to be emphasized that the evaluation of a Manual in behavioural terms is a very difficult task and is the least explored field. It is concerned, on the one hand, with the cognitive processes (i.e., aspects of critical thinking, short and long term memory and language competence) and, on the other hand, with the use and performance of knowledge in practical situations. Behaviour is an area of interplay between competence and performance (theoretical knowledge and practical application), where 'the correspondence is not as simple and unequivocal as is sometimes assumed.' For example, a badly written (presented) text (Manual) is not invariably an ungrammatically written piece of work. It may be grammatically correct, yet it may demand several attempts at reading before its intended message is understood. Thus, grammaticality and communicability or typo-graphic correctness and comprehensibility are not invariably reflected in a one-to-one relationship.

It has been pointed out, for example, that 'when explanations start to become convoluted and incomprehensible, often the defence given by the authors is that the subject matter itself is inherently complex. But there are of course a number of ways of dealing with complex material' (Wright, 1977). A number of non prose devices (like flow-charts, logical trees, tables etc.) can be employed to break down complexity so that it becomes understandable for the reader. However, in the field of behavioural research this cannot be accepted without qualifications. Research in this field has shown that (*a*) there is not one universally optimal way of displaying information, (*b*) characteristics of the user situation will also in part determine in which format the information is best displayed, and (*c*) the nature and the number of interdependant contingencies may preclude some display formats, (Wright, 1977).

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This simply shows that the present project has to deal with many variables internal and external to the Manual. The outline for evaluation of the Manual has been set in terms of five objectives (*a* to *c*) as mentioned earlier.

Implications of the Study

This project has been taken up by the Department of Linguistics, apart from other things, with a view to answering the larger and fundamental questions pertaining to the area of educational reform and development i. e., '*development for what*?' '*in whose terms?*' and '*by which means*?'. The implications arising from within the findings are expected to have wider significance towards providing scientific knowledge of socio-cultural factors that assume different roles in the process of education, selection and promotion of particular language or style for general instruction, etc. There is a pressing need for a new look at our educational failure and wastage, discriminatory attitudes and practices in language selection in our multilingual and pluricultural society and out-moded instructional material in a rapidly changing society. Research studies show that cognitive and linguistic styles seem to be associated with socio-cultural differences (Cohen, 1969) and rural-urban differences (Maccoby and Modiano, 1969). Even conceptual differences in mathematical relationships have been shown as affecting education cross-culturally. The failure in education (Singleton. 1973) has been explained in an easy and facile manner; it has been wrongly characterized as 'cultural deprivation', 'cultural disadvantage', 'cultural poverty', 'rural backwardness' and 'disabilities of the poor' etc. The present Project, apart from evolving a 'Manual Evaluation Design' will lead to :

(*a*) better understanding of the social advantages of cultural differences,

(*b*) better ability to make universalization of education

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as a multicultural enterprise for all participants,

(*c*) more realistic views of what education can accomplish as an instrument of social goals, and

(*d*) hard-nosed unromantic analysis of educational innovations to see if they are, indeed, meeting the goals they proclaim.

This project has been undertaken under conditions which are highly prohibitive both in terms of time and academic as well as experimental support. Much that we would have liked to achieve would require a period of 2 to 3 years. We have begun the work with the hope that it would be possible to increase sophistication into the concepts, the test instruments and the conditions of administration.

The Project sanction came through in the middle of May this year; work on evaluation of the Manual was to be completed by the middle of August. During this period concepts were to be defined, instruments designed and field-work carried out in three visits. There are not, to our knowedge, any earlier models of evaluation work in adult literacy in technical register in rural areas. The project requires the setting up of a model of functional literacy in rural areas involving factors inherent in the readability and comprehension of information pertaining to the register of health sciences.

The first experimental work of the Project was designed and conducted in the mid-course of the training programmes being administered at the various Primary Health Centres. The training programmes for the first batch of trainees began in the first week of April for a period of three months. It was thus not possible to administer any pretests with a view to finding out the changes generated in them by the usc of the Manual either in training or during self-reading.

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We aimed at achieving limited objectives through this Project in areas as mentioned earlier. The main thrust of our work lay in finding out ways in which the Manual could be rendered highly functional for an average adult literate in the rural areas.

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II. THE MANUAL AND ITS COMMUNICATION SETTING

We have accepted the Manual as an event in a communication act. An event in a communication act takes place in a given social context and communication setting. 'The communication potential of an act cannot be fruitfully analysed without taking into account such factors as status, educational level and role relations of the participants and their socio-linguistic attitudes. Thus, a Manual which proves to be extremely suitable for one group of people may turn out to be of very little use in a region with different demographic, linguistic, and socio-cultural features. It is, therefore, necessary to explore the communication setting in which it is proposed to be used before the evaluation work is initiated.

Recent socio-linguistic studies have shown that social variables like age, sex, education, occupation, caste etc. vary in accord with linguistic behaviour. Similarly, the use, user and usage—related codes, sub-codes and functional styles, which constitute the verbal repertoire of the community and influence the communication matrix, are significant factors specially affecting the communication behaviour in a multilingual community like ours. It is, therefore, suggested that a typology of those variables which determine the components of the communication matrix be ascertained and studied.

We have taken into consideration the following factors: region and social strata, verbal repertoire of the community, age, sex, education, occupation, economic status

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and caste with a view to defining the communication setting.

Region and Social Strata

As the work pertaining to the project was to be restricted to only two PHCs of Utter Pradesh, we selected one PHC each in two districts—Mauranipur in Jhansi and Daurala in Meerut—for our experimental work. The two districts were chosen in view of their varying dialectal background; two distinct dialects of Hindi are spoken in the two regions.

The population using the Manual has been classified under the following two major headings:

1. those who are directly involved in the use of the Manual, and

2. those who are indirectly involved in the use of the Manual.

The first category, for purposes of our experimental work has been divided into three sub-categories:

(*a*) trainers who use the Manual as a set of instructional materials,

(*b*) CHWs under training, who are the recipients of the content of the Manual, and

(*c*) trained CHWs who use the Manual in discharging their duties in the village.

The second category of those indirectly involved in the use of the Manual includes the target group of health services, i.e. the rural population in general. During our fieldwork, we made an attempt to define the communication matrix of this target group from which the trained CHWs are drawn.

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The sample for our study was drawn from both the categories. In the present work, we were primarily concerned with those informants who were directly involved in the use of the Manual. Since the number of possible informants available in this category was limited, we interviewed all those who were present at the PHCs at the time of our field-work visits. In all we interviewed 55 trainees (27 at Mauranipur and 28 at Daurala), 21 trained CHWs (9 at the Mauranipur and 12 at Daurala) and 13 trainers (7 at Mauranipur and 6 at Daurala). Thus the total number of informants directly involved in the use of the Manual is 89. This sample has been classified in terms of the following social parameters: age, sex, education, medium of instruction at school, caste, socio-economic status etc. Since there were no female CHWs, the variable of sex could not be studied.

For investigations related to determining the verbal repertoire of the community from which the CHWs are drawn we interviewed 40 informants from the village of Roopadhamna, Mauranipur. In defining the social parameters, we included the major caste groups in the village of (Brahmin, Yadav, Harijan and others), three age groups (—15 years, 16-35 years and+36 years) and both the sexes (male and female). We depended largely on the CHWs, family register for selecting our informants and the selection procedures adopted in both these categories is given in Part II.

Verbal Repertoire

The verbal repertoire of the Indian speech community is generally characterized by a continuous chain from the most illiterate variety of the local village dialect to the highly specialized English language with regional dialects. State and national languages serve as media of supra-local communication; there is a reciprocal intelligibility beween heirarchically adjacent areas. (Srivastava: 1976) The verbal repertoire of the speech community from where the informants were drawn is characterized by three features:

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the constituent codes, the hierarchical organisation of codes and the overlapping in the codes with cases of free mixing across the codes.

(*a*) The code matrix of the verbal repertoire consists of the following:

(*i*) village dialects associated with intimacy (Bundeli in the case of Mauranipur and a dialect which is not very different from Hindi in the case of Daurala),

(*ii*) colloquial Hindi associated with formality in the case of both Mauranipur and Daurala,

(*iii*) literary Hindi associated with formal education, and

(*iv*) English, which is highly restricted in use indicating competence of an incipient nature and controlled by a marginal section of the population.

(*b*) In form and function of speech interaction the above four codes are hierarchically arranged; the higher the education, the greater the access to and control of the codes.

(*c*) In the intersecting zone where two adjacent codes meet, one can observe substantial and meaningful overlapping of the codes. This phenomenon has been called language mixing.

The dynamics of social change generated by such factors as the spread of education and mass media are influencing the nature of roles assigned to various codes within the verbal repertoire of the speech community. Our study reveals that there is a gradual shift towards the assimilation of higher codes (codes above the village dialect) and that it is correlatable with age and education. Furthermore, this competence in acquiring higher codes

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is becoming slowly definable in terms of the domains of usages, e.g. in intimate and informal situations children are retaining the use of the village dialect, while they are shifting to the use of Hindi in speech situations characterized by non-intimate and formal situations.

This switchover is inversely proportional to age, e.g., old villagers (36 years old) prefer to use the village dialect in most situations. Children, as pointed out earlier, are gradually shifting towards the use of colloquial Hindi in formal and non-intimate situations, while continuing to use the village dialect in intimate and informal situations. In the case of adults (16 to 35 years old), the village dialect and colloquial Hindi were found to be alternating in a random manner in several domains. There is a substantial element of language mixing in this group.

English, however, does not form a significant part of the community's verbal repertoire. Hardly anyone knows it well enough to negotiate a social encounter. Only 4 out of the 40 villagers interviewed attempted reading comprehension and writing tests in English and they scored very low.

The rural agricultural communication setting provides very few opportunities to develop reading habits in any language and so limits communication with the urban setting. The variety of High Hindi employed in the Manual is in no context used productively by any stratum of the community. The villagers have no productive control over High Hindi and only marginally control receptive skills in it. Of the 10 villagers out of 40 who attempted the reading comprehension test in High Hindi, 7 scored zero or one. Although the trained CHWs and the trainers score quite high in reading comprehension, the villagers themselves control only speaking and understanding skills in Hindi. The scores in writing skill in Hindi were particularly low for the whole population.

Our observation shows that no informant was strictly

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monolingual. The informants varied differently with the following scale of bilingualism—incipient, subordinate and coordinate. Incipient bilinguals are those who, although unable to produce any utterance in the second language, still indicate some understanding. Subordinate bilinguals are those who are able to speak the second language but not fluently and show a good or fair understanding, and coordinate bilinguals are those who speak and understand both languages well. Thus, the informants could be classified as incipient, subordinate or coordinate with respect to competence in their mother-tongue (village dialect), localised vernacular (pidginised Hindi), regional language (Hindi) and non-regional languages (High Hindi and English). Hindi acquires a non-regional base in terms of its form style through its use in formal situations. On the other hand, the colloquial Hindi which is associated with intimacy and informal situations tends to assimilate more of the dialectal elements. One notices that the gamut of styles and varieties pertaining to Hindi form a cline from the most pidginised variety of Hindi to the extremely standardised one with intermediate zones between these two. Like English, the formalised high-brow style of Hindi does not form a part of the active verbal repertoire of the community.

The chart given below indicates the degree of bilingual competence in the six codes: village dialect (Bundeli), casual low-brow (localised vernacular), casual middle-brow (simple Hindi), formalised middle-brow (style of popular literature in print), formalised high-brow (style of learned discourse) and English, among the three sections of our subject population (villagers, trained CHWs and trainers).

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	Villagers	*Trained*	*Trainers*
Village-dialect (Bundeli)	Mother Tongue	Mother Tongue	Some other village dialect Mother Tongue I (in Bundeli)
Casual Low-brow (Localised Vernacular)	C	C	I
Casual Middle-brow (Simple Hindi)	S	C	C
Formalised Middle-brow (Style of popular printed literature)	I	S	C
Formalised High-brow (Style of learned dlscourse)	X	I	S
English	X	I	S

C=coordinate, S=subordinate, I=incipient, X=no competence

Trainers are thus incipient in Bundeli and in the localised dialect-coloured vernacular, subordinate in English and in the style of learned discourse, coordinate in simple Hindi and the style of popular literature in print. Trained CHWs are incipient in English, and in the style of learned discourse, subordinate in the style of popular literature in print and coordinate in simple Hindi and localised vernacular. Literate villagers are incipient in the style of popular literature in print, subordinate in simple Hindi and coordinate in the localised vernacular. Of course, villagers and trained CHWs are proficient in their local village dialect. The trainers at Mauranipur generally had, as their mother tongue, a different dialect and were incipient in the local village dialect, i.e., Bundeli.

It is clear that the verbal repertoire of the trainers

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(i.e., transmitters of knowledge about health) and the villagers (i.e., recipients of knowledge about health) are highly polarized. The trainers are merely incipient in the varieties in which the villagers have coordinate competence and the villagers do not have even incipient competence in the varieties in which the trainers have subordinate competence. It is only the trained CHWs who control, to some extent, all the codes involved in the communication setting.

Structure of Communication Setting

The CHWs are thus placed in a situation where they happen to control all the codes involved in the communication setting. This has significant implications for laying down strategies of transmission of information. Communication is by its nature a social function and it means a sharing of elements of behaviour through a set of rules i.e., a code (Cherry, 1961 : 6). The communication act becomes a success only through this sharing of the code (s) between the producer (speaker) and the recipient (hearer). Jesperson (1965 : 17) has very succinctly stated this point of view :

> "The essence of language is human activity—activity on the part of one individual to make himself understood by another, and activity on the part of that other to understand what was in the mind of the first. These two individuals, the producer and the recipient of language, or as we may conveniently call them, the speaker and the hearer, and their relations to one another, should never be lost sight of. . . ."

It is essential that both the speaker and the hearer should control the same code; any code-level difference between the producer and the receiver will create obstructions in comprehension. The set of language rules which the producer (speaker) uses at the time of encoding a message must be the same which a recipient applies in the process

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of understanding the message through decoding. Thus, a successful act of communication can be represented as

P Code = R Code

The transmitter, in the context of the communication setting relevant to the Manual, is in fact the trainer and the ultimate recipient of the message is the villager. The above stated configuration now reveals that

P Code (trainer) $\neq$ R Code (villager).

(is not equal to)

The CHWs have been called upon, in such a situation, to play the role of mediating agents as they share elements of linguistic behaviour both with the trainers, on the one hand, and with the villagers, on the other. The process of communication which incorporates these mediating agents can now be represented as

P Code (Trainer) $\Longrightarrow$ R Code (CHWs)

$\Downarrow$

P Code (CHWs) $\Longrightarrow$ R Code (villager)

It is being hypothesized here that the most efficient encoding/decoding of a message requires competence in the producer of the coordinate type and in the receiver of at least the subordinate type. It is apparent that in the communication setting the codes available to the trainers and the CHWs are divergent. It implies the following :

(1). The CHWs receive the message in one code and encode the message, after understanding it, for

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the village population in another code. The CHWs are thus being expected to control one code for receiving the message, while another for transmitting it.

(2) While the trainers seem to prefer, as revealed by subjective attitude measurement, the use of the standard dialect for encoding messages relating to training, they prefer to receive these in the village dialect.

(3) Recognizing that the CHWs are placed in the central position of being the ultimate transmitters of knowledge about health, it would have been ideal to base the Manual somewhere between the casual middle-brow style (i.e., style of simple Hindi) and the formalised middle-brow style (i.e., style of popular printed literature). The trainers have the coordinate type of competence in these two varieties. The CHWs will, of course, be required to convert it to the casual low-brow style of Hindi (i.e., style of localized vernacular) while communicating with the village population. The ideal situation for the CHWs-village population relationship lies in the mother-tongue; in its absence, communication can be carried on in the casual low-brow style and the casual middle-brow style of Hindi. Realizing further that the knowledge to be transmitted belongs to a technical register, the transmitters (speakers) are required to make use of intervening strategies of transferring/converting such knowledge to the level of its recipients. This has been demonstrated in the chart given overleaf.

The chart focusses on two aspects of language orientation and use:

(*a*) cognitive enrichment by intake of knowledge, and
(*b*) group participation by transfer of knowledge.

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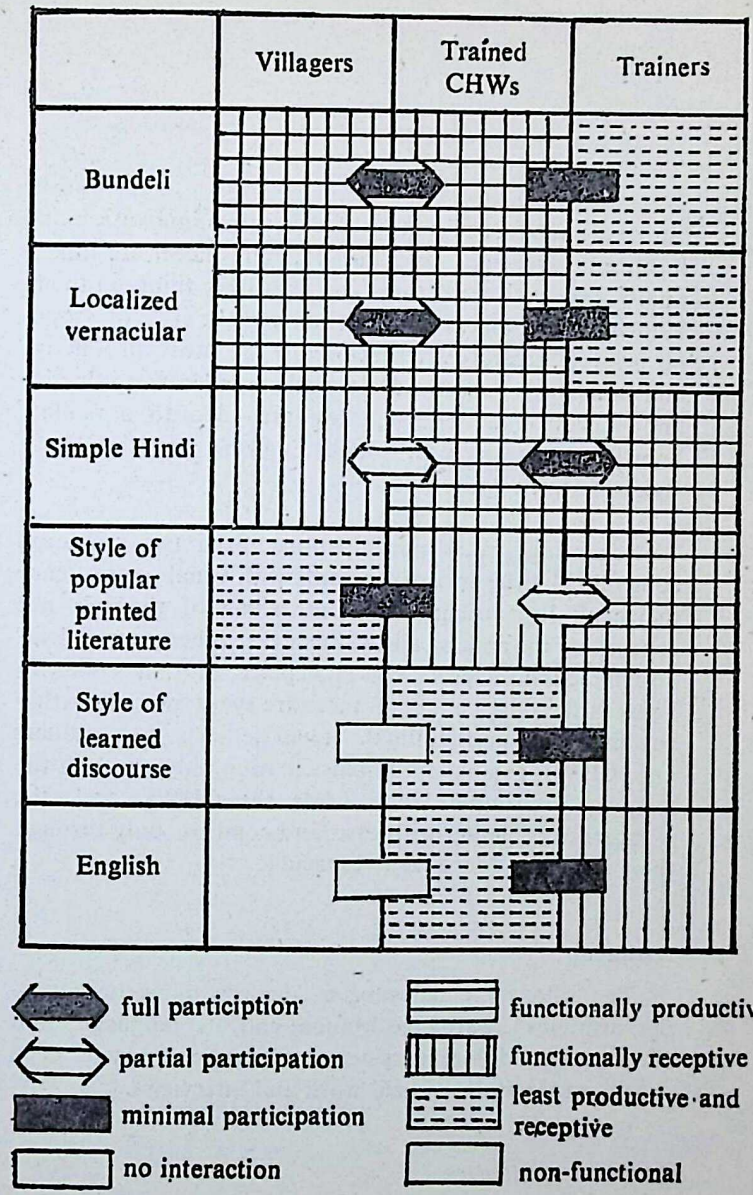

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The language for the intake of knowledge has been hierarchically organised as—functionally productive, functionally receptive, least productive and receptive and non-functional. For example, for villagers English and the style of learned discourse in Hindi are non-functional, the style of popular printed literature is least productive and receptive, simple Hindi is functionally useful for the intake of knowledge but not for creative innovation and localized vernacular and the Bundeli dialect are functionally productive as they can creatively think in them. Similarly, for trainers simple Hindi and the style of popular printed literature are functionally the most productive and Bundeli and localized vernacular are least productive and receptive. Of course, they are able to assimilate knowledge passively through English and the Hindi styles of learned discourse.

Regarding group participation, if the two codes are controlled by the two participants with equal competence they can fully participate in them. If one of them is not controlling the code at all in which the other is proficient, no interaction of speech can take place in that code. In between these two extremes there are two types of participation; partial and minimal. It can be seen that trainers and CHWs can have full participation only through the language of simple Hindi while the CHWs and the villagers can interact with ease and comfort only through their dialect and localized veruacular.

Attitudes

The following conclusions as regards linguistic attitudes, attitudes towards the Manual and its language, and towards the different systems of medicine, have been drawn on the basis of field work and interviews.

Linguistic Attitudes

In order to elicit the informant's reactions towards different language styles of Hindi an attitude test was

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designed and administered. Informants were asked to rank in order of their preferences selected passages specially written in the following styles.

Passsage I. Hindi with English words in Roman,

Passage II. High Hindi (Formal Middle-brow),

Passage III. Hindi with English words in Devanagari,

Passage IV. Simple Hindi (Casual Middle-brow),

Passage V. Localised Vernacular (Casual Low-brow).

The ranking, divided into three categories for analysis —High Ranking (H)—first and second preferences, Moderate Ranking (M)—third preferences and Low Ranking (L) fourth and fifth preferences, is shown overleaf.

The following inferences can be drawn from attitude scores for the three groups of the informants:

(1) All the three groups of informants-villagers, trained CHWs and the trainers accord high ranking to simple Hindi. None of these three groups, places this style of Hindi in the low rank.

(2) A very large majority of the three groups of informants accord low preference to information written in Hindi with English words in Roman script.

(3) Information written in Hindi with English words in Devanagari script has again been accorded low preference by the three groups of informants.

(4) High Hindi has been ranked next in preference to simple Hindi both by the trainers and the villagers. This preference seems to make sense in so far as the trainers are concerned; they have subordinate competence in this style of Hindi. The villagers have, however, no competence in this style of Hindi;

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Passage	*Villagers*			*Trained*			*Trainers*		
	H	*M*	*L*	*H*	*M*	*L*	*H*	*M*	*L*
I	00.00	8.33	91.66	11.11	00.00	88.88	20.00	00.00	80.00
II	66.66	00.00	33.33	22.22	44.44	33.33	60.00	20.00	20.00
III	33.33	16.66	50.00	22.22	33.33	44.44	00.00	60.00	40.00
IV	83.33	16.66	00.00	77.77	22.22	00.00	80.00	20.00	00.00
V	16.66	58.33	25.00	66.66	00.00	33.33	40.00	00.00	60.00

Table showing % of informants' ranking on different styles of Hindi.

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they still prefer it next to simple Hindi. This can be explained by the prestige usually associated with High Hindi.

(5) It is significant to note that the trained CHWs, who are expected to transfer knowledge about health to the rural population, prefer the localized vernacular to High Hindi despite their better performance in the reading comprehension test based on the latter.

The total perspective with regard to the ranking of the five different styles of Hindi in descending order as indicated by the three groups of informants has been stated below:

1. Simple Hlndi (Casual Middle-brow)
2. High Hindi (Formal Middle-brow)
3. Localised Vernacular (Casual Low-brow)
4. Hindi with English words in Devanagari
5. Hindi with English words in Roman.

Simple Hindi has been prefered by all the three groups of informants. The content of the Manual written in this style would not only act as a motivating force (supported by highly positive attitudes), but control over this style by the three groups of informants would also facilitate its efficient use. It has been pointed out earlier that the trainers and the trained CHWs have coordinate competence in this style of Hindi while the literate villagers have subordinate competence.

Attitudes towards the Manual and its language

There is a sharp contradiction between the scores pertaining to attitudes towards the language of the Manual and its actual control. While the CHWs demonstrate positive attitudes towards the language of the Manual,

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their performance and control of the variety used in the Manual is, however, considerably low. The reasons for the positive attitudes towards the language of the Manual (which is in High Hindi) can be based on many factors. The discursive thinking in written format in Hindi is generally found in this variety. Writers consciously avoid, in this type of discourse, English loan words and dialect forms. Their attitudes towards the language of the Manual are also determined by its association with their career prospects, prestige and high status. While the trainers and the trained CHWs at Maurnipur were favourably disposed towards the localised vernacular, they found the dialect speaker less educated than the speaker of the language of the Manual.

It is for these reasons that inspite of low scores obtained on the language style of the Manual, no informant has a negative attitude towards the Manual. Most of them (51 out of 59) refer to it frequently and find it very useful in the discharge of their duties.

The suitability of the Manual as a communication act must be seen in the context of some other social variables like age, sex, education, occupation, economic status and reading habits of participants. The detailed demographic account related to these variables and the implications of our findings have been discussed at length in Part II.

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III. MAIN FINDINGS

This section deals exclusively with the generalizations made on the basis of our analysis of the Manual and the experiments conducted to test its suitability as a reference book. The theoretical premises and some of the basic constructs of theory have been discussed in Part II. The approach, method and techniques of analysis are also discussed in Part II. We have also considered the implications of our findings for some other areas of academic and pragmatics interest.

On the basis of our micro and macro-analysis of the Manual we have made generalizations in the following areas: the language content of the Manual, the instructional potentialities of its use as a unit of work, its readability and comprehensibility and their relationship to social factors, and strategies of presentation of facts.

A. Language Content of the Manual

For a well organized written piece of work, it is necessary that language employed therein should be :

(*a*) orthographically sound,
(*b*) grammatically correct,
(*c*) structurally natural,
(*d*) semantically graspable,
(*e*) logically valid,
(*f*) stylistically appropriate,
(*g*) contextually appropriate, and
(*h*) functionally communicable.

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Our analysis of the language of the Manual on different levels of its organization reveals that:

(1) *Orthographically the Manual is inconsistent and variable.*

The written character of the language of the Manual is inconsistent and variable and creates considerable difficulty in reading: (*a*) inconsistency in the orthographic system, for example, हड्डी—हड्डी (of cluster graphemic order), खांसी—खाँसी (of anuswara/anunnasika marking), and पेचिस—पेचिश, मल-मूत्र—मल, मूत्र (*b*) variability due to foreign loan words, for example, कमजोर—कमज़ोर (Perso-Arabic origin); लिप्पीज—लिप्पीज (English origin) ; (*c*) printing errors, for example, मूसड़ों (मसूड़ों) सन्धिच्युति ; (अस्थिच्युति) (*d*) spelling mistakes, for example कम्पकम्पी ।

(2) *Grammatically the language of the Manual in many places is incorrect.*

The language of the Manual fails to meet the conditions of (*a*) samnidhi, i.e. contiguity which leads to the concept of linear sequencing, (*b*) yogyata, i.e. logical consistency, and (*c*) aakaanksaa, i.e. syntactic expectancy. Many sentences violate the syntactic rules of Hindi language. This is specially the case with compound and complex types of sentence structure having modals, for example, मानसिक रोगों के लक्षण के रोगियों को पहचानिये और इन रोगियों को स्वास्थ्य कार्यकर्ता के पास भेज दें ।

(3) *Structurally the language of the Manual is deviant and unnatural to Hindi language.*

The Manual shows a sentence structure which is at times grammatically correct, but being deviant in nature, causes considerable resistance in the reader. The structure of the language shows that it is not a piece originally written in Hindi. The analysis shows that Hindi words and phrases have often been merely filled into the sentence pattern of English. The frequent occurrence of unfamiliar forms, deviant structures and unnatural constructions

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throw the readers off balance, for example, कुत्ते के काटने के घाव संक्रमित होते हैं।

(4) *Semantically the languuge of the Manual is sometimes difficult to understand.*

Semantic features that make the language inexplicit and unintelligible include rare words, rare collocations of words, and rare events or concepts. The language of the Manual is full of these features. Examples drawn to illustrate the events and abstract concepts are not selected from the village life. The synthesized words and word compounds are of an order that creates difficulty in understanding. Expressions do not convey the intended meaning, for example, क्या त्वचा अधिकृत है या आंशिक रूप से नष्ट हुई है, संवेदना-हारी औषधि।

(5) *Relationships between propositions within and across paragraphs are at times not logically valid.*

An organized test centres around a discourse topic(s) which entails a set of propositions. For fluent reading it is necessary that the relationships between discourse topics and proposition and between two or more propositions remain logical. Our analysis shows that within and across paragraphs logical relationships between propositions are not well maintained.

(6) *Textually the language of the Manual is not well formed.*

While reading one approaches the created text with a question in mind. The text should be organized to supply the answer and satisfy the expectations of the reader. Often, the Manual neither provides the full answer nor satisfies the reader's curiosity. It also does not establish links between language and situation. There is a poor organisation of discourse adjuncts and rules of deixis and back references are generally violated for example, जैसा पहले बताया जा चुका है or जहां तक इसका संबंध है। Although these ordinarily signify the reintroducing topic

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in the Manual they have been used as introducing a discourse topic, for example, जहाँ तक काम्बीनेशन टेबलेट्स का संबंध है has been used without prior information about combination tablets. Rhetorical coherence that arranges the parts into a composite text for a total effect of clarity and effectiveness is also strikingly lacking.

(7) *Stylistically the language of the Manual belongs to the high variety of Hindi language.*

Language is a range of potentialities i.e. it offers an open-ended set of options in behaviour. For effective communication the selection has to be made in the context of a given situation. Hindi has a full gamut of styles as indicated in chapter II. The style of Hindi of the Manual oscillates between the formalized high-brow and the formalized middle-brow varieties. In the area of registeral variety where some technical knowledge is required, it relies heavily on English loan-words and neologisms based on Sanskritic elements. There is a lexical and phrasal condensation of High Hindi, even in those places where native equivalents are available.

(8) *Contextually the language of the Manual is understandable more to a professional man than to a lay person and is oriented more towards the elite class than towards the rural population or urban poor.*

In the social distribution of knowledge and the shaping of experiences, the language of the Manual tends toward the devices employed by professional men and the elite population. Our observation shows that contextual constraints imposed upon grammatical-lexical choices in the Manual are based on elite class consciousness and the functions of a professional man. The communication structure here is based primarily on 'elaborated code' with ideational functions rather than on 'restricted code' with interactional functions. The communication strategy is directed to discourage rather than promote the role of the mother tongue and the village-dialects. This may satisfy

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the aesthetic sensibilities of its users but communicability is bound to be ineffective, or at least, disfunctional. The language of the Manual is more a language of knowledge of formalised concepts and authority than a language of experience, social interaction, work participation and group solidarity.

B. Instructional Potentialities of the Manual as a Unit of Work

As a unit of work, i.e. method of organizing learning experiences, the instructional potentialities of the Manual have been analysed under three headings:

(*a*) a self-contained reference guide,
(*b*) a teaching aid, and
(*c*) communicative strategies.

(1) *As a self-contained reference guide, the Manual shows contradiction between the objectives and their realization.*

There seems to be an inherent contradiction in the Manual in so far as its objectives are concerned. While the Foreword to the Manual lays emphasis on imparting knowledge of 'fundamentals of health, treatment of common ailments, maternal and child welfare, first aid, etc.' a close reading of the Manual confirms the view that the curative (as compared to the promotive and the preventive) aspect has been overemphasised. An observation of the trainers' lessons provides further support to this view; trainers tended to draw the trainees' attention towards the recognition of symptoms, diagnosis of the ailment and the prescription of suitable medicine for a period ranging from one to two days. The CHWs also view themselves as doctors, and not para-professionals or support manpower as envisaged in the scheme. The trainees like to be addressed as 'Doctor' by the patients. Trainers invariably complained that the trainees viewed themselves as doctors, not as para-professionals. The Manual cannot be used as an effective self-contained reference guide if its underlying

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objectives are not realized in it and are not appropriately understood by its users.

(2) *The Manual stimulates formal knowledge but does not adopt a problem-solving approach.*

The Manual stimulates learning of formal knowledge; opportunities for a problem-solving approach to health needs do not seem to be visualised therein. The various diseases and the systems of medicine listed and explained in the Manual have not been built around any real village life experience units. In reality, the work of the CHW is going to be centred around real life experiences. In its formal (traditional) format, the Manual can at best impart knowledge; it cannot generate applicational skills. The use of the Manual as a self-contained reference guide, in this context, is likely to serve a limited theoretical purpose; any transfer of such knowledge into skills is bound to be marginal. The concept of a function-oriented Manual needs to be materialised in terms of presentation of experiences in day-to-day village life, and presented in a manner that lays down steps to solve the problems. Observation of instruction in progress at the training centres supported this view.

(3) *There is an absence of devices to convert the register of health science into the language of the common man*

The delineation of the subject matter in a language loaded with terms from the register of health sciences and furthermore explained with Sanskritised or Persianised Hindi words reduces its amenability to any feed-back from the mother tongue. Simulation exercises undergone by the trained CHWs indicate the absence of any attempt at conversion of the subject matter into the mother tongue. The data obtained from simulation exercises indicate the frequent use of such words as dehydration, store, PHC, temperature etc. or तापाघात, निर्जलीकरण, कुपोषण, आन्त्रकृमि etc. The inclusion of these words and phrases in the CHWs

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interaction with the village population might create socio-cultural distance between them. The CHWs use English terms not just for registral expressions; even other words of English i.e. advise, refer, under etc. are frequently used.

(4) *As a teaching aid, the Manual is inadequately supported in the area of indigenous systems of medicine.*

The five systems of indigenous medicine—ayurveda, yoga, siddha, unani and homeopathy—have been inadequately dealt with in the Manual. Systems like yoga and siddha do not have academically strong centres of study which could provide extension support to training centres by sending specialists as visiting lecturers/demonstrators.

The overemphasis on allopathy at the cost of the indigenous systems of medicine at the instructional level is further accentuated by the CHWs' attitudes towards the various systems of medicine. A large number of trained CHWs (65%) prefer the allopathic system of medicine. The obvious explanation lies in the well organised infrastructure of this system of medicine and its practice as compared to the other systems. The next preference was accorded to the ayurvedic system and then the homeopathic system. However there is a definite prejudice against the local cures.

(5) *Instruction fails to generate desired changes in the learner in terms of power (knowledge), ability (skill) aud interest.*

The instructional process, inclusive of the Manual, the trainers, the trainees, and other components of the teaching-learning situation generate limited changes in the CHWs in terms of power (knowledge) ability (skill) and interest (faith in and commitment to the cause of rural health). Observations so far made support the effecting of change only at the level of power (knowledge). The instructional process is formal in nature and does not visualise a functional or experimental approach to health needs.

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A comparison of comprehension scores obtained by the two groups of the population on Sanskritised adverbials and phrases indicates a similar trend. While the trainees obtained an average score of 46 the trained population had a score of 67. The trained CHW population obviously shows an increased familiarity with the Manual as compared to the trainee population. Incidentally, the trainee population at Daurala had the Manual and obtained a score of 45, whereas the trainees at Mauranipur (who did not have the Manual) obtained a score of 48. The use of the Manual by the trainee does not seem to make any significant difference.

(6) *There is a marked absence of organization in the CHWs communication with the patients in the village.*

Simulation excercises confirm this view. Many CHWs ask about a symptom or two, decide right away that it is Malaria or some other disease, and prescribe Cloroquin or APC tablets. An effective organization of information would reflect an inquiry into the nature of symptoms as experienced by patient, the frequency of their recurrence, the tentative decision about the ailment, the prescription of treatment for a period not exceeding twenty-four hours, the recording of necessary information for use by the PHC and the manner of administrating medicine. All these points were found missing in the simulation exercises.

C. Readability and Comprehensibility of the Manual

The readability and comprehensibility of the Manual was measured through cloze tests and multiple-choice tests with a view to finding out difficulties inherent in the Manual in reading, and levels of competence of its users in comprehending the text. The tests were designed to find out how far its users were able to manipulate the content effectively in communication rather than how much they knew of a given pattern in an abstract sense.

The term 'readability.' refers to the intrinsic difficulties

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in reading inherent in the language of the Manual. Operationally, the scores obtained after counting the number of exact words restored to the text of the Manual (exact recall of the deleted items from the text of the Manual) reflect the readability potential of the users. Comprehensibility has been viewed more in the context of the learner's ability to understand the intended message of a given text. Operationally, the scores obtained after counting the contextually acceptable words reflect the level of comprehensibility of the users. The differences between the two rest on two types of questions for each 'fill-in.' 'Does it match the original word?' verus 'Is the response contextually acceptable?'

(1) *While comprehensibility scores of the Manual are moderately, high, the readability scores are found to be very low.*

Tests were conducted to determine the readability and comprehensibility of the Manual. A passage from the Manual was selected and a cloze test was designed and administered to the CHWs. On the basis of their scores, they were classified into the following three generally acceptable categories:

Levels of achievement	*Percentage*
Fluent	60% and above
Instructional	45% to 59%
Frustration	0% to 44%

The term fluent implies that the reader can understand a given text without much difficulty. The term instructional requires, however, that the reader be provided help through instruction for understanding the text. The term frustration signifies a reader who can merely decode parts of the text, but cannot groups its total meaning.

Readability scores were found to be very low. 96% of the informants are either at the instructional or frustration

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level. On the other hand, comprehensibility scores for the Manual text are considerably higher. 70% of the informants are at the fluent level. The number of informants at the frustration level has also decreased significantly from 33 to 7.

(2) *Readability increases when the language of the Mauual is simplified.*

In order to check whether a simpler text would elicit higher readability and comprehensibility scores, a passage from the text of the Manual was linguistically simplified and a cloze test was designed on it. Readability scores in that case rose considerably. The number of informants at the fluent level was 23 rather than 5.

(3) *Readability scores of function words are upto the expected level of achievement provided they belong to basic language patterns.*

In the case of supplying the post-positions, 82% of the informants achieved the fluent level when exact words were counted as correct fill-ins, and 89% when contextually acceptable words were counted as correct. Similarly, when the possessives were to be supplied in the blanks, 64% of the informants were found to be at the fluent level with exact word count, and 77% when contextually acceptable words were counted as correct.

Since a 'closed set' of grammar offers limited alternatives, one would expect a better control over it as compared to an 'openset' of language such as vocabulary. However, when the comperhensibility of the Sanskritised adverbials was taken into account, achievement scores fell drastically low. Among the trainees, only 32% were found to be at the fluent level.

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(4) Looking at the comprehensibility scores of content words, there is a need to change the 'lexical patterns' used in the Manual.

The need to change the lexical items is further emphsiased by another test. The informants find it very difficult to associate some Sanskritised words in the Manual with their meanings. Only 20% of the informants achieve the fluent level. Nearly 50% of the informants show complete ignorance of the meanings of 13 words out of 25 in the contextualised vocabulary test. But the words the inforformants succeed in associating with their meanings also happen to be highly Sanskritised. The discrepancy in the responses of the informants may be explained by factors such as longer history of assimilation of these words in the Manual.

D. Strategies of Presentation of Facts

The problem of presentation of technical information in a non-technical format is a vital one. Though the printing and lay out of the Manual look very impressive, we feel it can be made more effective by using better formats of presentation. We have discussed and tested the efficiency of the Manual with regard to the usefulness of different formats of presentation of facts primarily under prose format and non-prose format, i.e. flow charts, a tabulation scheme and visual presentation. Experiments were also designed to test the utility of the proposed index as a supplement to the content already given. The role of abbreviations and technical words has also been analysed.

(1) In the non-prose farmat, the Manual relies heavily on pictographs and tables, rather than flow-charts and diagrams.

By and large, the Manual demonstrates an effective and illustrative use of pictures. There are occasions, however, when the use of pictures seems to be too intricate and lacking in meaning, i.e. the picture relating to the preparation of dehydration mixture showing a woman

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with a pinchful and handful of salt. Our tests on the suitability of pictures to convey information shows considerable variations. In one case only 8.45% of the informants are at the fluent level whereas the precentage of the informants at the same level is 42.25 and 69.01 in the second and the third cases.

Research evidence tends to favour the use of a non-prose format, specially the flow chart when the subject matter is complex. This is because relationships among more than three variables can be expressed only with difficulty in prose. We observed that even when relationships with variables and propositions involve more than five items, no attcmpt has been made in the Manual to present the facts in a flow-chart.

(2) *Tables are found to be the most optimal technique of presenting complex material involving more than four variables.*

A passage from the Manual (11.1.4) involving complex inter-relations of several variables was rendered into two non-prose formats, namely, a table and a flow-chart and their utility was compared with the given prose format. The result of the experiment shows that of all the three formats used for presenting the information the informants took minimum time in locating the correct answers through a flow-chart. In fact, the time taken in the case of the flow-chart (8 mins. average time) is half of the time taken when the prose format is used (16 mins. average time). Though in the flow-chart the time taken in locating the correct answers is less, the rate of accuracy in the case of the table was better than the flow-chart and strikingly higher than the prose format. Considering both the accuracy and time taken, the prose format appears to be the least and the table the most suitable alternatives in presenting such information.

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(3) *The information retrievel potential of the Manual is quite low.*

Many devices relevant to information retrieval are missing from the Manual. For example, the Manual should have an index for quick and correct retrieval of information as an appendix. Our test shows that the use of an index increases accuracy and decreases the time taken in locating information. The informants generally took less time in locating information through the proposed index (average time 17 mins.) as compared to the time taken when they used the Manual content (average time 26 mins.) The informants also improved in locating the correct answers through an index as they progressed from the first question (average time 2 mins. 2 secs.) to the last question (average time 8 secs. only). Familiarity with the index reduced the time taken and increased the accuracy of location. If the method of consulting an index is made a part of the training curriculum, the process of information retrieval will become still simpler and quicker.

(4) *Abbreviations pertaining to diseases and medicines have been found highly comprehensible only when these have been expanded and used in situational contexts.*

The overall scores of the identification test for abbreviations show that the informants are conversant with their use. The average percentage of informants at the fluent level is 75.4. However, it needs to be noted that abbreviations like R.C.A. and P.R.A.I. (which have neither been expanded any where in the text nor contextually explained) have generated a relatively low score.

(5) *Skill in the use of technical words shows a significant variation at the receptive and the productive levels.*

Informants demonstrate a high degree of understanding of technical words at the receptive level, whereas the same is very low at the productive level. A test was designed specifically to find out the informants, familiarity with

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the names of the diseases (as given in the Manual) in their High Hindi form. The result shows that only 39.18% of the population under study achieved the fluent level, while 47.30% remained at the frustration level.

In view of the poor performance of the informants, it is felt that they cannot identify those obscure items which do not form part of their common experience and such terms are not suitable carriers of information. It is suggested that local equivalents of such terms be either substituted for terms given in High Hindi, or at least be indicated alongside.

(6) *Headings and sub-headings in the Manual provide explicit structure.*

The classificatory devices adopted for integrating the information have been appropriately used; these facilitate the identification and location of information. However, a few exceptions remain.

For example, in Unit 4.3.4., relating to sanitary latrines, the definitional part has been given somewhere after 15 to 16 lines. Information concerning the utility of the latrines has been given in Unit No. 4.46. Thus all information pertaining to one point has not been detailed at one place. It could have been presented in the following manner: (*1*) definition, (*2*) types, (*3*) advantages and uses, (*4*) description of a sanitary latrine, (5) responsibility of the worker, and (*6*) how sanitary latrines prevent disease transmission.

(7) *Information contained in the Manual has been classified in an inadequate manner.*

The classification of information in the Manual has been provided according to the systems of medicine. The same can also be done according to a corrrelation between the type of disease and the systems of medicine.

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In spite of the points stated above, the Union Ministry of Health and Family Welfare, Govenment of India, and other agencies involved in the production of the Manual, need to be congratulated for this very significant work. It is for the first time that the following points have been highlighted in the preparation of the Manual.

(1) Health care apart from being a right is also an individual and group responsibility.

(2) Knowledge regarding basic health and hygiene should be shared by everyone, rather than guarded as a privilege of the select few.

(3) Basic health, alongwith its delivery through an appropriate infrastructure, should be encouraged to emerge from among the people themselves. The Manual draws on a combination of what is best in modern and traditional health services. Furthermore, it emphasises the concept of 'informed self care' as the main target of health activity.

The Manual incorporates in its text a very appropriate and meaningful use of tables in conveying information of a technical nature. The use of a non-prose format is useful in the context of the low readability scores obtained on the text of the Manual. The inclusion of a non-prose format raises the comprehensibility of the information thus presented.

It also needs to be stressed that the general layout printing, and production of the Manual is highly commendable.

In conclusion, the reader needs to bear in mind that the emphasis in the present work has centered largely on finding out areas, through appropriate research strategies, where improvements in the Manual can be

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effected. The reader should not view the report as being critical of the Manual.

The vital and significant contribution of the Manual in transmitting information regarding health care has already been accepted. The present work has been directed solely towards guidelines for improvement and revision of the Manual.

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IV. GUIDELINES FOR FURTHER WORK

The present work on evaluation is restricted in scope in so far as it relates only to the communicability of the Manual; it does not purport to make any assessements of the nature and quantum of the subject matter. The present work rests on the assumption that the subject matter is an exclusive concern of medical and para-professional agencies.

Evaluation of any text/manual is not an end in itself. It is an on-going process which entails the repeated implementation of a series of steps that have been described below; this repeated application is intended to seek evaluative insights for the purpose of rewriting and revising the text/manual. The evaluation of a text/manual considers the context of its users and the effect its use has on them. It seeks to quantify, in an empirical manner, these effects. Both the text of a manual and its users share a common concern in so far as the two are expected to fulfill and perform certain functions. The context of the present Manual characterises functions as preventive, promotive and curative with regard to aspects of health science. The effects that the Manual is expected to have on its users (i.e., the CHWs) have been seen in terms of knowledge, skill and interest.

The steps involved in the process of evaluation are determined to a substantial extent, by the goals or objectives inherent or specified in a given text/manual. These objectives determine consequently the nature of tests and other measurement instruments. It is expected that the tests and other evaluation measures shall generate certain

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outcomes. These outcomes are fed back into the Manual with the explicit intention of making it more usable.

This process of evaluation, for an ideal situation, can be applied to the present Manual through such steps as determination of the objectives of the scheme and of the Manual, choice of evaluation measures, compilation and analysis of results, the comparison of results with the hypothesised desired minimum level of communicability and the decision to discard, rewrite or revise the Manual. The process is continuously repeated with the explicit intention of improving the communicability of the Manual.

The present work on evaluation has resulted in the enunciation of two important concepts :

(*a*) a general evaluational framework, and

(*b*) general guidelines for the writing of a Manual. Tests and other evaluation measures will lead, as part of the general evaluation design, to certain insight that determine the guidelines for the writing of the Manual. These tests and other measures are also helpful in formulating and refining a general theory of evaluation design.

It is assumed that prior to the writing of a manual, a set of communicational maxims are hypothesised. The Manual is written on the basis of these communicational maxims. It is further assumed that, in an ideal situation, all the communicational maxims have been realised in the writing of the Manual. Tests and other measures framed with a view to assessing this realization are again based on these same communicational maxims. There is thus a bi-directional interaction between communicational maxims and evaluation design; the relationship between these two aspects is that of theory and practice. Specific tests and other measures formulated within the framework of a general evaluation design reveal through their results the

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degree to which the communicational maxims have been realised in a Manual. At this stage, a desired minimum level of communicability of a given manual is hypothesised. Furthermore, it is essential to hypothesise the lowest end of such communicability. Test results below the desired minimum level of communicability call for work on rewriting and revision of a manual.

Three levels of achievement have been specified in the present work : fluent, instructional and frustration. Where tests and other measures indicate the lowest end of the last level, i.e. of frustration, it is better to discard the manual and write it afresh rather than rewriting or revising the existing one (see diagram).

It appears that certain prerequisites and communicational maxims should be borne in mind in order to produce an effective manual or any other text with defined objectives and social purposes. The pre-requisities are comprised of several descriptive and analytic variables which contribute to an understanding of *who* speaks *what* language to *whom* and *when* and in *which setting*.

Prerequisites

A written text, like any other mass media (i.e. radio, television and the press), carries a potential danger in so far as it has "a built-in one way bias which is difficult to counter" (Balcomb, 1975). It does not envisage any face-to-face interaction between its writer and its reader. The essential requirement of an act in communication centring around a social purpose presupposes live interaction either orally or in written form. It is in this perspective that reading has been characterized as a dialogue. The reader approaches the text with a question in mind with the hope that the text shall provide its answer. The text therefore has to be oriented to the reader (user or consumer).

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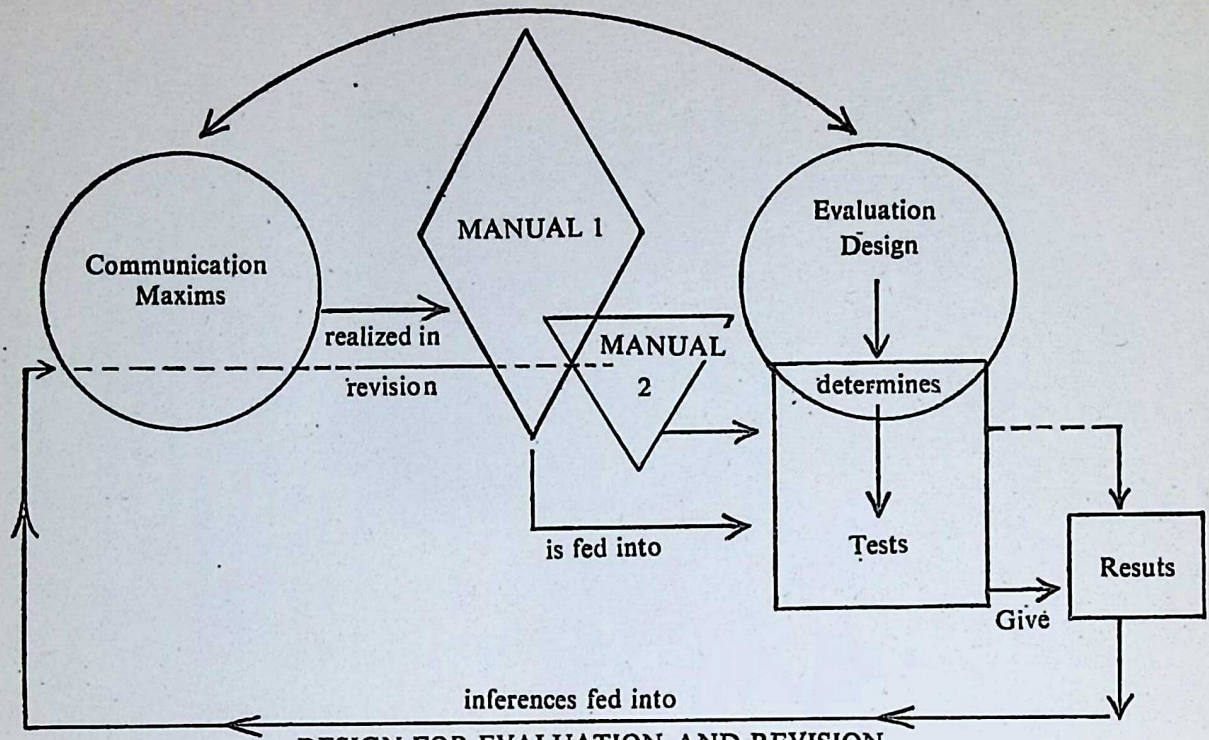

DESIGN FOR EVALUATION AND REVISION

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It is suggested here that a reader-oriented text should have its design based on the following four considerations:

(1) The identification of its users.

(2) The questions the users are likely to bring with them when approaching the text. The stress here is on the specification of information on the basis of the perceived roles or the activities likely to be performed by the users.

(3) The medium through which the reader's questions should be answered.

The emphasis here is laid on the choice of language and style, and the layout of the format in which information is to be transmitted to the reader. This is broadly covered by the term 'communication strategy'. It is expected that answers given through the text shall (*a*) produce the effect desired by its writers and (*b*) satisfy the reader's curiosity. The writer, through his text, usually aims at generating changes in the behaviour of its readers, hence the need to measure the reader's achevements in behavioural terms. These requirements indicate the degree of significance that needs to be accorded to the writer's understanding of the purpose and objectives of the manual.

(4) The specification of the purpose and objectives in writing the text.

These are likely to be pre-determined by the essential philosophy underlying the scheme. In the present context the Manual for Community Health Workers (Hindi version) has been written with the specific intention of training a cadre of para-professionals or support manpower to serve preventive, promotive and curative functions, in that order, in the field of health.

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The first three pre-requisities constitute the state of the user and his communication setting with a set of objectives or a socially meaningful perspective. Goffman (1964) points out that the state of the individual "includes not only his biological and psychological states but also his interpretive structuring of the world as he experiences it, based on his previous socialization experiences as a member of the culture."

A study of communication strategies adopted by the users will require on investigation into the situational or contextual variables. Three major aspects of these are form, meaning and context of information. These will be influenced by the capacity of the users, the organisation of verbal meaning for socially definable purposes and the sensitivity of rules to the situations (Hymes : 1971).

Communicational Maxims

Seven communicational maxims have been postulated in the present work. It is believed that these seven maxims need to be substantially realised in the text of the Manual. It is further felt that any inadequate realization of these maxims in the Manual is likely to impair and lower the level of its communicability.

1. *Focus*

It highlights some elements out of the total event reflecting the perspective and orientation the writer wants to give to the text.

A single event can be seen differently depending upon the orientation of the person towards the event, i.e. a business transaction can be viewed as selling, buying or trading. Similarly, the content of the Manual can be viewed from the point of view of the medical professionals or the social scientists. It can thus be oriented either towards a formal study of medical science or as a work experience in the context of a community. The content of

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the Manual can be alternately seen as emphasizing the curative or the preventive measures.

As has been pointed out under instructional factors, the content of the Manual is oriented more towards the specialist in medical sciences than towards the applicational emphasis of the social scientist, more towards the stimulation of formal knowledge than towards a problem-solving approach, and, more towards a curative direction than the preventive.

2. *Quantum*

It specifies the amount of information, necessary for an understanding of the message by the reader without loss or additional gain.

One can indicate a convenient axiom: write only what is necessary for understanding. The present Manual draws on six systems of medicine; it needs to be considered whether the parts of the Manual dealing with the five indigenous systems of medicine need to be strengthened in terms of quantum of information. Some of the indigenous systems have not been adequately explained. It has been pointed out in the study of presentational factors that some of the pictures are redundant as far as their effectiveness in communicating the content is concerned. It also needs to be considered whether information pertaining to all the five indigenous systems of medicine needs to be included in every copy of the Manual. It may be useful to print separate sections for each system; these can then be incorporated in the Manual depending on popularity of a system in an area.

3. *Depth*

It determines the level of complexity at which the content is to be presented.

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The various layers of knowledge pertaining to a given topic of information will be explained depending on the role perception of the CHWs. The CHWs are to be trained like 'Barefoot Doctors', it might be useful to provide them with a deep grounding in knowledge concerning human physiology. Otherwise, a stress on the improvement in environmental surroundings and individual hygiene may be considered sufficient. It needs to be stated that quantum and depth may make mutually conflicting claims for a place in the Manual; one has apparently to strike a delicate balance between the two. Here again, the communication specialist can play a very effective role. He would stress the need to give preference to the non-formal aspect of knowledge, thus keeping in check the academic depth to which a subject specialist is likely to succumb to.

4. Tone

It stresses the speech-act dependency.

If the purpose is essentially to impart knowledge for its own sake, the tone will be directed towards the statement of all the relevant information. However, if the statement of knowledge is intended to effect changes in the users both at the level of previously held beliefs and at the level of action, a change in tone is essential. In the case where the user seeks mere information, it can be stated in the manner of a dictionary or an encyclopaedia. If it expects its user to elicit knowledge with a view to converting it in terms of action or adopting a direction, the tone will have to be changed.

The present Manual responds to the implications of this maxim only at the surface level; it states scientific knowledge in a formal manner without incorporating strategies for change in beliefs or action.

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5. Agnation

It implies how far the teaching material is related to the life of the users.

The knowledge and the skills imparted should draw on what is already within the knowledge and experience of the reader. It will not be possible to effectively communicate a message unless it draws on relationships among the components of a pattern controlled by the reader. It will essentially be an act of establishing a relationship between language as a formal system and language as a function of cognition.

It has been pointed out earlier that the Manual does not exploit the experiences of village life in exemplifing concepts.

6. Quality

It refers to the intrinsic properties of the code which has been used to transmit the message.

It includes an ideal set of conditions for the text, i.e. the text ought to be orthographically sound, grammatically correct, structurally natural, semantically graspable, logically valid and stylistically appropriate. The micro-linguistic analysis of the Manual shows that all these conditions have been violated at several places.

7. Mode

It refers to a set of linguistic and non-linguistic devices used to eonvey the intended message effectively.

The Manual does not always make the necessary distinction between simple and complex messages and does not consistently use the corresponding formats of presentation. For example, a message involving four or five variables may be profitably presented in a non-prose format like a table or X2 flow-chart. The Manual does not have any indexing system to facilitate information-retrieval.

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Recommendations

The present Manual facilitates communicability to a degree where it calls for a drastic revision. The task of revision needs to be undertaken in steps which require short-term and long-term work.

The objectives for revision should be defined with a view to effecting improvement in the readability, comprehensibility and communicability of the Manual. The findings of the present work on evaluation can be treated as symptomatic of drawbacks inherent in the Manual. The present work is based on a sample technique; it needs to be expanded both in its scope and depth for the revision of the Manual with a view to realizing all the communicational maxims.

Short-term work

Work should be started on the revision of the Manual on the basis of such considerations as have been stated under the communicational maxims called 'quality'.

Long-term work

This should be done at three levels :

(*a*) a close study of the Manual,

(*b*) field survey, and

(*c*) revision of the Manual.

The close study of the Manual will consist of two aspects: its function and its format. The work relating to function should seek to identify areas where emphasis on preventive and promotive aspects is either found lacking or altogether missing. Work relating to format will be undertaken to find out the suitability of various information presentation formats (i.e. prose, tables, flow charts, etc.) and their efficacy in conveying different kinds of messages.

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Work relating to field survey will include an explanation of the setting in terms of its users, the verbal repertoire and the code matrix in order to understand the communication strategies applied by the CHWs for the intake of knowledge from the Manual and the trainers and its transmission to the village population. Both the intake of knowledge and its transmission entail the collection of data regarding vernacular or dialectal equivalents of terms and phrase expressions peculiar to health science.

The findings emerging from the close study of the Manual and the field survey should form the basis for the revision. The revision work pertaining to a manual which caters to a programme of mass participation and of national importance, should be entrusted to a team consisting of the following :

(*a*) one communication speacialist,
(*b*) one subject specialist, and
(*c*) two writers with evidence of creative work in the native language and familiarity with village life.

It is essential to provide a communication specialist at the stage of writing for mass communication which has specific goals in view and gives precise directions, and at the screening level with a view to evaluating the realisation of the communicational maxims. The provision for a communication specialist must be in addition to a content specialist and is vital to the writing of a manual and the implementation of promotional programmes which entail multiple variables of people's participation. Communication strategies, if properly understood and applied, can help, to a great extent, in transmitting knowledge to non-specialist populations.

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GLOSSARY

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AFFIX : An inflexional or derivational element added to a base to form a stem or word.

CHANNEL : It is a medium by which the signals of the code are transmitted.

CLINE : A cline is a scale which forms the basis for classifying a specified set of objects.

CLOZE TEST : It is a method of deleting every Nth word from a prose selection and evaluating the response a reader makes as he supplies the deleted words.

CODE : It is an arbitrary prearranged set of signals. Technically, it is agreed transformation by which messages are converted from one set of the signs to another. A language is merely one special variety of code.

COMMUNICATION MATRIX : Different language dialect and varieties employed by a given speech community taken together comprise a communication matrix.

COMMUNICATIVE COMPETENCE : It refers to the psychological, cultural and social rules which discipline the use of speech in social settings. It is an ability to participate in society as not only a speaking but also a communicating member.

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COMPREHENSIBILITY : It refers to the comprehension of the intended meaning of a given material. Operationally, the scores obtained in the cloze test after counting the contextually acceptable words reveal the comprehensibility of the material. (See readability)

CONTENT WORD : A word which has dictionary meaning. In a sentence like 'I had *had* the book,' the italicised 'had' is a content word because it designates the sense of possession. See also 'Function Word.'

COORDINATE BILINGUAL : Speakers who speak and understand the second language like the native speakers.

DECODER : The person or device which performs the process of decoding.

DECODING : It is a process by which the signals of the code are identified and intended messages are obtained.

DEIXIS : These are pronouns which are said to refer to a person or object or other feature of the situation of utterance.

DERIVATION : The process of adding affixes to a root or stem, thereby forming the stem of a different lexeme.

DIGLOSSIA : A form of bilingualism in which two languages (or dialects) are used habitually for different purposes or in different social situations.

DISCRETE-POINT TEST : A test designed to diagnose with great reliability the students knowledge of a specific level of language, i.e. phonology grammar and vocabulary. It aims at testing

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one and only one point of grammar, phonology or vocabulary at a time.

DOMAIN : It is the cluster of social situations typically constrained by a common set of behavioural rules.

ELEBORATED CODES : They are largely now-coding, and adaptive in vocabulary and grammar through the elaboration of subjective intent, (see restricted code).

ENCODER : The person or device which performs the process of encoding.

ENCODING : It is a process by which certain signals in the code are selected and put into the channel.

FIELD TEST : A statistically controlled test of a device or an idea in the actual environment for which it is designed.

FUNCTION WORD : It indicates the grammatical relation of words in a sentence and does not have a dictionary meaning. In a sentence like 'I *had* had the book' the italicised 'had' is a function word, (see also content word).

INCIPIENT BILINGUALS : Those speakers who are unable to produce any utterance in the second language but still indicate some understanding of it.

INFLECTION: : A change made in the form of a word in order to mark its grammatical function in the sentence.

INFORMATION RETRIEVAL : It is a purposeful recovery from the information storage in response to a request. It is, therefore, a fundamental activity occuring whenever a fact is withdrawn from human memory.

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INTEGRATIVE SKILL TEST : A test designed to find out a learner's overall communicative proficiency. This has been called also a 'summative assessment' of a learner's performance ability.

LEVELS OF ACHIEVEMENT : Generally, the levels of achievement are categorised under three subheadings with the following marking values:

Fluent (60% and above)	: ability to understand the text easliy,
Instructional 45% to 59%	: ability to understand the text with the aid of a certain amount of text instruction, and
Frustration (0% to 44 %)	: inability to grasp the pattern of meaning in the text, although one may be able to decode certain parts of the successfully.

LEXEME (S) : The word or stem as an item of the vocabulary.

LEXICAL/LEXEMIC : Relating to the total stock of linguistic signs or morphemes of a given language.

LEXICAL FORM : A linguistic form considered merely in its purely lexical character.

LEXICON : The total stock of linguistic signs (words or morphemes) existing in a given language.

LINGUISTIC COMPETENCE : It is a native speaker's largely unconscious knowledge of a language system.

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MATCHED-GUISE TEST : It is a research technique that makes use of language and dialect variations to elicit the stereotyped impressions or biased views which members of one social group hold of representative members of a contrasting group.

MORPHEME : It is a smallest meaningful unit of a language.

MULTIPLE CHOICE TEST : In this test a range of answers is provided, and the candidate has to choose one of them. It is broken down into several types intended to measure various components in language skills such as phonology, grammar, vocabulary, word order etc. It consists of 'item' 'stem' 'distractors', 'alternatives' and 'response' etc. The question and the suggested answer taken together are called items. All the suggested answers are called 'alternatives, or 'responses.' The correct answer is called the 'correct response'. The incorrect answers are called 'distractors'.

NON-PROSE FORMAT : It refers to the use of communicative devices other than prose such as tables, flow-charts, diagrams, graphs and pictographs, etc. This is more useful for conveying information where multiple relationships are sought for simultaneous presentation.

OBJECTIVE TEST : It is a kind of test which can be scored without the influence of the scorer. It asks questions, each having only one correct answer, or a set of previously agreed acceptable answers.

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PROPOSITION : A discourse topic about which the speaker/writer is either providing or requesting new information.

PROSE FORMAT : It refers to the use of narrative description exclusively in prose for explication and enunciation of an idea for the purpose of communication.

REGISTER : It is a variety of language co-related with the performer's social role on a given occasion.

READABILITY : It refers to reading difficulties inherent in the language of a given material. Operationally, the scores obtained in the cloze test after counting the number of exact words restored to the given material reveal the readability of the material, (see comprehensibility).

RESTRICTED CODES : They are largely then-coding, and adaptive to the re-inforcement of group solidarity, (see elaborated code).

RHETORIC : It consists of techniques of organizing written/spoken material to maintain unity and coherence and of style in which the writer/speaker selects words to compose units higher than a sentence.

SETTING : It refers to the physical circumstances of a speech act, like time, place, etc.

SPEECH ACT : It is the basic unit for the analysis of verbal interaction. What the sentence is to grammer, the speech act is to verbal interaction. Thus, it is the minimal structural unity in a description of speech use.

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SPEECH COMMUNITY : It is a community sharing knowledge of rules for a conduct and interpretation of speech. Such sharing comprises knowledge of at least one form of speech, and knowledge also of its patterns of use.

SUBJECTIVE TEST : It is a kind of test which cannot be scored without the influence of the scorer. The same response may be marked differently by the same person(s) on different occasions.

SUBORDINATE BILINGUALS : Those speakers who are able to speak the second language but not fluently although they are good in understanding it.

SYNTAGMATIC : It is a type of relationship which exists between an item and its environment.

TEXT/DISCOURSE : A discourse or text is one which is created by sentences organised in a logical succession in a given single situation.

TOPIC : It is a common ground of reference for speaker/writer and hearer/reader.

VERBAL REPERTOIRE : It is the totality of linguistic resources (including languages, dialects, and varieties) available to the members of a community.

TRUE/FALSE QUESTIONS : These are selection type questions where response to certain given statements is given in terms of Yes/No.

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